

1 **AMENDMENTS TO THE CLAIMS**

2 Claims 1-9, as submitted with the original patent application, were cancelled in an  
3 earlier paper.  
4

5 Claims 10-29 were added in an earlier paper. The Examiner has rejected claims  
6 10-29 under 35 USC 112, 102 and 103. Claims 10-29 are cancelled. New claims are  
7 drawn to the disclosure of the SUBSTITUTE SPECIFICATION in combination with the  
8 Figures 1 through 11.  
9

10 10. (Cancelled)

11 11. (Cancelled)

12 12. (Cancelled)

13 13. (Cancelled)

14 14. (Cancelled)

15 15. (Cancelled)

16 16. (Cancelled)

17 17. (Cancelled)

18 18. (Cancelled)

19 19. (Cancelled)

20 20. (Cancelled)

21 21. (Cancelled)

22 22. (Cancelled)

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Application No. 09/041,685

*[Signature]*

1 22. (Cancelled)

2 23. (Cancelled)

3 24. (Cancelled)

4 25. (Cancelled)

5 26. (Cancelled)

6 27. (Cancelled)

7 28. (Cancelled)

8 29. (Cancelled)

9 30. (New) A waste liquid treatment system comprising the following:

10 A. a media matrix (1) comprised of at least one inner core (70) received into at

11 least one tube (20);

12 B. the media matrix (1) received into a media matrix container (250) having

13 wastewater inlet (350) and discharge means (400).

14 31. (New) A waste liquid treatment system of claim 30 further comprising:

15 A. the media matrix (1) is comprised of a plurality of tubes (20) each sized to

16 receive at least one elongated inner core (70);

17 B. the at least one inner core (70) has a top (75), a bottom (80) and a length (85);

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1 C. the tube (20) having a tube top (25), tube bottom (30) and tube length (35) and  
2 a tube axis (37); the tube axis (37) centrally positioned from the tube top (25) to the tube  
3 bottom (30) and extending throughout the tube length (35) of each tube (20);

4  
5 D. the inner core (70) having at least one vane (90);

6 E. the at least one vane (90) extending from a central core element (95) where the  
7 central core element (95) coincides with the tube axis (25).

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10 32. (New) A waste liquid treatment system of claim 31 further comprising:

11 A. the inner core (70) having a plurality of vanes (90); the central core element  
12 (95) of at least one inner core (70) parallel with the central core element (95) of other at  
13 least one inner core (70);

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15 B. the tube length (35) generally less than the inner core length (85).

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17 33. (New) A waste liquid treatment system of claim 32 further comprising:

18 A. the tube (20) having an inner wall (140) where at least one groove (150) is  
19 formed in the inner wall (140); said at least one groove (150) sized to receive at least one  
20 vane (90);

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22 B. the groove (150) comprising vane (90) restraining means securing the at least  
23 one inner core (70) in a fixed position within said tube (20);

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1 C. the tube (20) having an outer wall (190) having at least one fin (200)  
2 extending outwardly therefrom.  
3  
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5 34. (New) A waste liquid treatment system of claim 33 further comprising:

6 A. the tube (20) receiving at least one inner core (70) may be positioned at any  
7 location along the inner core length (85);  
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9 B. the at least one inner core (70) having at least eight vanes (90).  
10

11 35. (New) A waste liquid treatment system of claim 34 further comprising:

12 A. of the at least one vane (70) received into the at least one depression or at least  
13 one groove (150) at a vane tip (98).  
14

15 B. groove walls (155) extending from the inner wall (140) forming the at least  
16 one depression or at least one groove (150); said at least one groove (150) comprising a  
17 vane tip (98) restraining means.  
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20 36. (New) A waste liquid treatment system of claim 35 further comprising:

21 A. vane (90) restraining means by a friction fit between the vane tip (98) and  
22 groove walls (155) when received into the groove (150) or by application of an adhesive  
23 or a mechanical fixing means between the vane tip (98) and the groove walls (155);  
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1 B. at least two depressions or at least two grooves (150) are formed in the inner  
2 wall (140) with each of said grooves (150) receiving at least one vane (90).

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5 37. (New) A waste liquid treatment system of claim 36 further comprising:

6 A. the at least one vane (90) having a vane surface (92):

7 B. the at least one vane (90) extending from the central core element (25) along  
8 the length of said central core element (25); the surface (92) covered with a biofilm (97):

9 C. the at least eight vanes (90) are spaced equidistant from the adjoining vane  
10 (90) and extend from the central core element (25).

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13 38. (New) A waste liquid treatment system of claim 37 further comprising:

14 A. at least four fins (200) extending from said outer wall (190):

15 B. the fin (200) is generally elongated having a fin surface (210):

16 C. the plurality of tubes (20) contact adjacent tubes (20) at the respective tube  
17 outer walls (190) at least one contact point (195) where affixing means fix adjacent tubes  
18 together and hence to fix the position of the plurality of tubes (20) within the media  
19 matrix (1).

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22 39. (New) A waste liquid treatment system of claim 37 further comprising:

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1 A. contact point (195) affixing means including adhesives, mechanical fasteners  
2 and other methods or devices;

3 B. at least fins (195) extending outwardly from the outer wall (190);  
4

5 C. at least one contact points (195) comprised of flattened portion of the outer  
6 wall surface (195) extending from the tube top (25) to the tube bottom (30) parallel with  
7 the tube axis (37).

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10 40. (New) A waste liquid treatment system of claim 39 further comprising:

11 A. said tubes (20) in the media matrix (1) may be alternatively or additionally  
12 fixed in position by fin (200) affixing means employed at an intersection of fins (200) of  
13 adjoining tubes (20).

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17 41. (New) A waste liquid treatment system of claim 40 further comprising:

18 A. the tube inner wall (140) having an inner wall surface (142), the tube outer  
19 wall (190) having an outer wall surface (192); inner wall surface (142), outer wall surface  
20 (192), vane surface (92) and fin surface (210) receives biofilm (97).

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23 42. (New) A waste liquid treatment system of claim 41 further comprising:  
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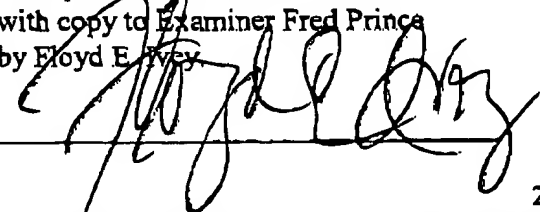
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1        A. wastewater inlet (350) and discharge means (400) comprising pipes; the  
2        wastewater inlet (350) directs flow of wastewater into the media matrix (1); the discharge  
3        pipes (400) discharges from the media matrix container (250).  
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